Abstract of the Disclosure

In a catalytic exhaust gas decomposition apparatus according to the preferred embodiment of the present invention, it is possible to suppress variations in velocity distribution of the gases introduced to the catalyst bed.

The catalytic exhaust gas decomposition apparatus spirals an exhaust gas containing therein a substance to be decomposed and a reactant gas, rectifies the spiral flow, and lets the substance to be decomposed contained in the exhaust gas react with the reactant gas after the spiral flow has been rectified. This arrangement uses, as a means for rectifying the spiral flow of the exhaust gas and the reactant gas, a plate-like baffle wall having therein a through hole at a portion near the center thereof. The spiral flow is allowed to pass through the through hole so as to be centralized temporarily. The spiral flow then passes through an enlarged section of a flow path downstream of the through hole before being introduced into the catalyst bed.

The arrangement helps minimize variations in gas velocity of the exhaust gas flowing into the catalyst bed, thereby allowing a desired decomposition rate to be obtained substantially consistently.